

Note to reader: *brown* and *purple* show the various names of the test and the signal.

Green underline shows insertions, ~~strikeout~~ (almost the same colour as the purple above) shows deletions

95.7.2 100GBASE-SR4 receive optical specifications

Each lane of a 100GBASE-SR4 receiver shall meet the specifications in Table 95–7 per the definitions in 95.8.

Table 95–7—100GBASE-SR4 receive characteristics

Description	Value	Unit
Stressed receiver sensitivity (OMA), each lane ^c (max)	–5.2	dBm
Conditions of stressed receiver sensitivity test: ^d		
...

^cMeasured with stressed receiver conformance test signal at TP3 (see 95.8.8) for the BER specified in 95.1.1.

^dThese test conditions are for measuring stressed receiver sensitivity. They are not characteristics of the receiver.

95.8.8 Stressed receiver sensitivity

Stressed receiver sensitivity shall be within the limits given in Table 95–7 if measured using the method defined by 95.8.8.1 and 95.8.8.5, with the conformance test signal at TP3 as described in 95.8.8.2.

Stressed receiver sensitivity is defined with all transmit and receive lanes in operation. Pattern 3 or Pattern 5, or a valid 100GBASE-SR4 signal, is sent from the transmit section of the PMD under test. The signal being transmitted is asynchronous to the received test signal. The interface BER of the PMD receiver is the average of the BER of all receive lanes while stressed and at the specified receive OMA.

95.8.8.1 Stressed receiver conformance test block diagram

A block diagram for the stressed receiver conformance test is shown in Figure 95–5. The patterns used for the received conformance test signal are specified in Table 95–10. The optical test signal is conditioned (stressed) using the stressed receiver methodology defined in 95.8.8.2, and has sinusoidal jitter applied as specified in 95.8.8.5. A suitable test set is needed to characterize and verify that the test signal used to test the receiver has the appropriate characteristics. ...

The stressed receiver conformance test signal verification is described in 95.8.8.4.

... The signal being transmitted is asynchronous to the received test signal. If Pattern 3 is used with a common clock for the transmit or receive lanes not under test, there is at least 31 UI delay between the PRBS31 patterns generated on one lane and any other lane.

...

Figure 95–5—Stressed receiver conformance test block diagram

95.8.8.2 Stressed receiver conformance test signal characteristics and calibration

The stressed receiver conformance test signal is used to validate that each lane of the PMD receiver meets BER requirements with near worst-case waveforms at TP3.

The primary parameters of the stressed receiver conformance test signal are its stressed eye closure (SEC), stressed eye J2 Jitter and stressed eye J4 Jitter. The SEC of the stressed receiver conformance test signal is measured ...

An example stressed receiver conformance test setup is shown in Figure 95–5, however alternative test setups that generate equivalent stress conditions may be used.

The following steps describe a possible method for setting up and calibrating a stressed receiver conformance test signal when using a stressed receiver conformance test setup as shown in Figure 95–5:

- 1) ...

2) ...

3) The required values of SEC and J2 Jitter, and the maximum value of J4 Jitter of the **stressed receiver conformance-test signal** are given in Table 95–7. A valid **stressed receiver conformance test signal** may ...

...

Sinusoidal jitter is added as specified in Table 95–11. When calibrating the **stressed receiver test conformance-signal**, the sinusoidal jitter frequency should...

Each receiver lane is conformance tested in turn. The source for the lane under test is adjusted to supply a **test signal** at the input to the receiver under test at the “Stressed receiver sensitivity (OMA), each lane (max)” specified in Table 95–7, and the test sources for the other lanes are set to the “OMA of each aggressor lane” specified in Table 95–7.

95.8.8.3 J2 and J4 Jitter

...

95.8.8.4 Stressed receiver conformance-test signal verification

The **stressed receiver conformance-test signal** can be verified using an optical reference receiver with an ideal fourth-order Bessel-Thomson response with a reference frequency f_r of 19.34 GHz. ...

Care should be taken when characterizing the **stressed receiver test signal** because excessive noise/jitter in the measurement system would result in an **input test signal** that does not fully stress the receiver under test. Running the **stressed receiver tolerance-test** with a **test signal** that is under-stressed may result in the deployment of non-compliant receivers. ... ensure that the **stressed receiver conformance input test signal** meets the stress and sinusoidal jitter specified in 95.8.8.2 and 95.8.8.5.

95.8.8.5 Sinusoidal jitter for **stressed receiver conformance test**

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